

**METHODS AND SYSTEMS FOR ANALYZING FLUTTER TEST DATA USING
NON-LINEAR TRANSFER FUNCTION FREQUENCY RESPONSE FITTING**

ABSTRACT OF THE DISCLOSURE

5 Methods and systems for analyzing flutter test data using non-linear transfer function
frequency response fitting are provided. In one embodiment, a plurality of data points are
read, with each data point representing a motion of an aeroelastic structure (*e.g.* an aircraft
surface) at a different location. A closed form fit to the plurality of data points is performed
to obtain an initial curve fit condition. At least one non-linear transfer function frequency
10 response curve fit is then performed to the plurality of data points.

